IN THE CLAIMS:

The following listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) A memory medium comprising program instructions for specifying a signal analysis function, wherein the memory medium is in a computer system comprising a display, wherein the program instructions are executable to implement:

receiving user input specifying a first operation, wherein the first operation implements at least a portion of a signal analysis function, and wherein the first operation requires an input signal;

automatically analyzing prior operations specified by the user, wherein one or more of the prior operations is operable to generate a respective signal, thereby operating as a signal source, wherein said analyzing the prior operations determines one of the prior operations as an input signal source for the first operation, wherein the input signal source provides a first input signal to be used as the input signal for the first operation;

performing the first operation on the first input signal received from the input signal source, wherein said performing produces an output signal;

displaying the output signal on the display; and

performing said automatically analyzing, said performing, and said displaying for each of a plurality of first operations input by the user.

2. (Currently Amended) The memory medium of claim 1, wherein said automatically analyzing prior operations input by the user to determine one of the prior operations as an input signal source for the first operation further comprises:

automatically analyzing the first operation to determine one or more inputs required for the first operation and respective signal types of each of the one or more inputs, ~~wherein each one the one or more inputs has an associated signal type~~; and

determining one or more prior operations of the prior operations that provide respective output signals that have the respective signal types, wherein the one or more

prior operations comprise the input signal source, and wherein the respective output signals comprise the first input signal.

3. (Previously Presented) The memory medium of claim 1, wherein said automatically analyzing prior operations input by the user to determine one of the prior operations as an input signal source for the first operation comprises:

automatically analyzing the first operation to determine one or more appropriate signal types for the first operation; and

determining a prior operation of the prior operations that provides an output signal of an appropriate signal type, wherein the appropriate signal type comprises one of the determined one or more appropriate signal types for the first operation, wherein the prior operation comprises the input signal source, and wherein the output signal comprises the first input signal.

4. (Original) The memory medium of claim 3, wherein the program instructions are further executable to implement:

assigning the output signal of the appropriate signal type to the first operation as the first input signal.

5. (Previously Presented) The memory medium of claim 3, wherein the first operation corresponds to a first function block, and wherein said automatically analyzing the first operation to determine one or more appropriate signal types for the first operation comprises:

querying the first function block to determine the one or more appropriate signal types for the first operation.

6. (Previously Presented) The memory medium of claim 5, wherein the first operation requires a plurality of input signals, and wherein said automatically analyzing the first operation to determine one or more appropriate signal types for the first operation further comprises:

querying the first function block to determine a number of inputs required for the first operation; and

automatically analyzing prior operations input by the user to determine a plurality of input sources for the first operation corresponding to the number of input signals required for the first operation.

7. (Original) The memory medium of claim 4, wherein said determining a prior operation of the prior operations that provides an output signal of the appropriate signal type comprises:

querying a database to determine the prior operation that provides an output signal of the appropriate signal type, wherein the database comprises information indicating respective output signal types of the prior operations.

8. (Original) The memory medium of claim 7, wherein said querying the database to determine the prior operation that provides an output signal of the appropriate signal type comprises:

analyzing input/output (I/O) dependencies among the prior operations and the first operation, wherein the I/O dependencies indicate a proximity ordering of the prior operations with respect to the first operation; and

querying the database based on the proximity ordering of the prior operations, beginning with an initial prior operation that is closest to the first operation with respect to I/O dependencies, and ending as soon as a prior operation is found that provides an output signal of the appropriate signal type.

9. (Original) The memory medium of claim 8,

wherein the first operation requires a plurality of input signals, and wherein each of the plurality of input signals has a respective signal type; and

wherein said querying the database to determine the prior operation that provides an output signal of the appropriate signal type further comprises:

for each of the plurality of input signals, querying the database based on the proximity ordering of the prior operations, beginning with an initial prior operation

that is closest to the first operation with respect to I/O dependencies, and ending as soon as a prior operation is found that provides an output signal of the appropriate signal type.

10. (Original) The memory medium of claim 8,

wherein the first operation requires a plurality of input signals, and wherein each of the plurality of input signals has a respective signal type; and

wherein said querying the database to determine the prior operation that provides an output signal of the appropriate signal type further comprises:

iteratively querying the database regarding each of the prior operations to determine one or more prior operations that provide respective output signals of each of the respective signal types, based on the proximity ordering of the prior operations, beginning with an initial prior operation that is closest to the first operation with respect to I/O dependencies, and ending as soon as prior operations are found that provide respective output signals of the respective signal types or when there are no further prior operations to consider.

11. (Previously Presented) The memory medium of claim 1, wherein said automatically analyzing prior operations input by the user to determine one of the prior operations as an input signal source for the first operation comprises:

automatically analyzing the first operation to determine one or more appropriate signal types for the first operation;

determining whether any prior operation of the prior operations provides an output signal of an appropriate signal type, wherein the appropriate signal type comprises one of the determined one or more appropriate signal types for the first operation;

if any prior operation of the prior operations provides an output signal of an appropriate signal type, assigning the output signal of the appropriate signal type to the first operation as the first input signal; and

if no prior operations provide an output signal of an appropriate signal type,

displaying one or more additional operations that provide an output signal of the appropriate signal type; and

receiving additional user input selecting an additional operation from the additional operations, wherein the additional operation comprises the input signal source for the first operation, and wherein the output signal of the additional operation comprises the first input signal.

12.   (Previously Presented) The memory medium of claim 11, wherein, upon said selecting an additional operation, the memory medium further comprises:

automatically analyzing prior operations input by the user to determine an additional input signal source for the additional operation, wherein the additional input signal source provides an additional input signal; and

performing the additional operation on the additional input signal received from the additional input signal source, wherein said performing produces an additional output signal.

13. (Previously Presented) The memory medium of claim 1, wherein the first operation and the prior operations each correspond to a respective function block, wherein the program instructions are further executable to implement:

receiving user input modifying a configuration of a first function block, thereby changing input signal specifications for a corresponding operation, wherein original input signal specifications for the corresponding operation specify a first input signal type for the corresponding operation, and wherein the changed input signal specifications specify a second, different, input signal type for the corresponding operation;

automatically analyzing prior operations input by the user to determine one of the prior operations for a corresponding input signal source for the corresponding operation, wherein the corresponding input signal source provides a second input signal of the second, different, input signal type; and

performing the corresponding operation on the second input signal received from the corresponding input signal source for the corresponding operation, wherein said performing produces a corresponding output signal.

14. (Original) The memory medium of claim 13, wherein the respective function blocks are displayed in a diagram that visually represents I/O relationships between the function blocks, wherein the program instructions are further executable to implement:

when the I/O relationships between the function blocks change, automatically updating the diagram in accordance with the changed I/O relationships between the function blocks.

15. (Previously Presented) The memory medium of claim 1, wherein the first operation and each of the prior operations corresponds to a respective function block, wherein the program instructions are further executable to implement:

receiving user input modifying a configuration of a first function block, thereby changing output signal specifications for a corresponding operation, wherein original output signal specifications for the corresponding operation specify a first output signal type for the corresponding operation, and wherein the changed output signal specifications specify a second, different, output signal type for the corresponding operation;

automatically analyzing prior operations input by the user to determine one or more function blocks configured to receive an output signal of the first function block according to the original output signal specifications; and

if the one or more function blocks are configurable to receive the output signal according to the changed output signal specifications,

configuring the one or more function blocks to receive the output signal according to the changed output signal specifications.

16. (Previously Presented) The memory medium of claim 15, wherein the program instructions are further executable to implement:

if the one or more function blocks are not configurable to receive the output signal according to the changed output signal specifications, for each respective function block of the one or more function blocks,

automatically analyzing prior operations input by the user to determine a respective one of the prior operations for a respective input signal source for the

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respective function block, wherein the respective input signal source provides a respective input signal; and

performing the corresponding operation of the respective function block on the respective input signal received from the respective input signal source, wherein said performing produces a respective output signal.

17. (Original) The memory medium of claim 16, wherein the respective function blocks are displayed in a diagram that visually represents I/O relationships between the function blocks, wherein the program instructions are further executable to implement:

when the I/O relationships between the function blocks change, automatically updating the diagram in accordance with the changed I/O relationships between the function blocks.

18. (Original) The memory medium of claim 1, wherein the signal analysis function comprises a plurality of operations, wherein the program instructions are further executable to implement:

displaying an input signal for at least one of the plurality of operations.

19. (Currently Amended) A method for specifying a signal analysis function, the method comprising:

receiving user input specifying a first operation, wherein the first operation implements at least a portion of a signal analysis function, and wherein the first operation requires an input signal;

automatically analyzing prior operations input specified by the user, wherein one or more of the prior operations is operable to generate a respective signal, thereby operating as a signal source, wherein said analyzing the prior operations to determine one of the prior operations as an signal source for the first operation, wherein the input signal source provides a first input signal to be used as the input signal for the first operation;

performing the first operation on the first input signal received from the input source, wherein said performing produces an output signal;

displaying the output signal on a display; and

performing said automatically analyzing, said performing, and said displaying for each of a plurality of first operations input by the user.

20. (Currently Amended) A system for specifying a signal analysis function, comprising:

a processor; and

a memory coupled to the processor, wherein the memory stores program instructions for specifying a signal analysis function, wherein the program instructions are executable by a processor to:

receive user input specifying a first operation, wherein the first operation implements at least a portion of a signal analysis function, and wherein the first operation requires an input signal;

automatically analyze prior operations specified by the user, wherein one or more of the prior operations is operable to generate a respective signal, thereby operating as a signal source, wherein said analyzing the prior operations determines one of the prior operations as an input signal source for the first operation, wherein the input signal source provides a first input signal to be used as the input signal for the first operation;

perform the first operation on the first input signal received from the input source, wherein said performing produces an output signal;

display the output signal on a display; and

perform said automatically analyzing, said performing, and said displaying for each of a plurality of first operations input by the user.

21. (Currently Amended) A system for specifying a signal analysis function, comprising:

means for receiving user input specifying a first operation, wherein the first operation implements at least a portion of a signal analysis function, and wherein the first operation requires an input signal;

means for automatically analyzing prior operations specified by the user, wherein one or more of the prior operations is operable to generate a respective signal, thereby operating as a signal source, wherein said analyzing the prior operations determines one of the prior operations as an input signal source for the first operation, wherein the input

signal source provides a first input signal to be used as the input signal for the first operation;

       means for performing the first operation on the first input signal received from the input source, wherein said performing produces an output signal;

       means for displaying the output signal on a display; and

       means for performing said automatically analyzing, said performing, and said displaying for each of a plurality of first operations input by the user.